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| APPLICATION NO.         | FILING DATE | FIRST NAMED INVENTOR  | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-------------------------|-------------|-----------------------|---------------------|------------------|
| 10/717,929              | 11/21/2003  | Levinus Pieter Bakker | 081468-0306794      | 7549             |
| 909                     | 7590        | 08/11/2004            | EXAMINER            |                  |
| PILLSBURY WINTHROP, LLP |             |                       | NGUYEN, HUNG        |                  |
| P.O. BOX 10500          |             |                       | ART UNIT            |                  |
| MCLEAN, VA 22102        |             |                       | PAPER NUMBER        |                  |
|                         |             |                       | 2851                |                  |

DATE MAILED: 08/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/717,929

**Applicant(s)**

BAKKER ET AL.

**Examiner**

Hung Henry V Nguyen

**Art Unit**

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 8-11 is/are rejected.
- 7) ☒ Claim(s) 2-7 and 12-16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 11/2003.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1 and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Koster et al (U.S.Pat. 6,614,505).

With respect to claim 1, Koster et al discloses a lithographic projection apparatus comprising all basic features of the claim such as: a radiation system (IL) for transmitting a beam of radiation emitted from a radiation source (LA); a support structure (MT) for supporting a patterning structure (M) to be irradiated by the beam of radiation, the patterning structure

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adapted to pattern the beam; a substrate holder (WT) constructed to hold a substrate (W); a projection system (PL) for projecting a desired pattern formed on the patterning structure onto the substrate; a collector plate (133) can be regarded as claimed first screen (133), positioned in a path of the beam of radiation between the radiation source and an optical element to be screened from positively charged particles (151), the first screen being substantially transparent to the projection beam of radiation and a positive voltage (136) being applied to the first screen to repel at least a portion of the positively charged particles away from the optical element; a repeller plate (135) can be regarded as claimed second screen (135), positioned in the path of the beam of radiation on at least one side of the first screen, a negative voltage (134) being applied to the second screen to repel negative particles away from the first screen (see col.7, lines 31-64).

With respect to claim 17, the claimed method is seen to be inherent teachings in existence of the above apparatus.

3. Claims 1 and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Moors et al (US 2002/0109828 A1).

With respect to claim 1, Moors et al discloses a lithographic projection apparatus (figures 1-2) comprising all of the limitations of the instant claim such as: a radiation system (IL) for transmitting a beam of radiation emitted from a radiation source (LA); a support structure (MT) for supporting a patterning structure (M) to be irradiated by the beam of radiation, the patterning structure adapted to pattern the beam; a substrate holder (WT) constructed to hold a substrate (W); a projection system (PL) for projecting a desired pattern formed on the patterning structure onto the substrate; a first screen (11), positioned in a path of the beam of radiation between the

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radiation source and an optical element to be screened from positively charged particles, the first screen being substantially transparent to the projection beam of radiation and a positive voltage (see figure 2) being applied to the first screen to repel at least a portion of the positively charged particles away from the optical element; a second screen (12) positioned in the path of the beam of radiation on at least one side of the first screen, a negative voltage (see figure 2) being applied to the second screen to repel negative particles away from the first screen (see section [0022-0026]).

With respect to claim 17, the claimed method is seen to be inherent teachings in existence of the above apparatus.

### *Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Koster et al (U.S.Pat. 6,614,505) or Moors (U.S 2002/0109828 A1).

With respect to claims 8-11, Koster et al or Moors et al, discloses substantially all elements as recited in the instant claims. Koster or Moors does not expressly disclose the voltage being applied to the first screen or second screen as recited in the above claims.

However, Koster teaches that the exact potentials (provided to charge the screens (133, 135) will depend on the dimension of the apparatus as well as factors such as the rate and speed of

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contaminant particles accompanying the projection beam PB (see col.7, lines 42-50). This provides a clear suggestion that it would have been obvious to one having ordinary skill in the art at the time the invention was made to apply a proper voltage to the first screen or the second screen, as recited in the instant claims. The purpose of doing so would have been to repel effectively the contaminant particles and to prevent contaminant particles reaching the optical elements of the exposure apparatus.

***Allowable Subject Matter***

6. Claims 2-7, 12-16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter: with respect to claim 2-3, the prior art of record either alone or in combination, neither discloses nor makes obvious the combination of a lithographic projection apparatus comprising among with other features, a surface which is either grounded or in electrical contact with the second screen to screen the radiation source from the first screen.

As to claims 4-7, the prior art of record fails to teach a combination of a lithographic projection apparatus comprising among with other features, a first screen and a second screen having specific structures, as recited in the instant claims.

With respect to claims 12-15, the prior art of record, either alone or in combination, neither discloses nor makes obvious the combination of a lithographic projection apparatus

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having among other features, a radiation source and a synchronization device, with particular functions, as recited in the instant claims.

1. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung Henry V Nguyen whose telephone number is 571-272-2124. The examiner can normally be reached on Monday-Friday (First Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**Hung Henry V Nguyen**  
**Primary Examiner**  
**Art Unit 2851**

hvn  
8/5/04